# Project Report

**1. INTRODUCTION**

**1.1 Project Overview**

BookEase is a full-stack online bookstore platform developed using the MERN (MongoDB, Express.js, React.js, Node.js) stack. It supports three user roles: Customer, Seller, and Admin. The platform allows customers to browse, purchase, and review books; sellers to manage inventory and orders; and admins to oversee users, content, and system performance.

**1.2 Purpose**

The primary goal of BookEase is to simplify the buying, selling, and management of books through a user-friendly web interface. It addresses common issues in traditional bookstores, such as limited accessibility, poor inventory visibility, and inefficient review moderation.

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**2. IDEATION PHASE**

**2.1 Problem Statement**

"As a book lover, I want a platform where I can discover and purchase books easily, while reading trusted reviews and tracking my orders." BookEase solves the problem of fragmented online book shopping by offering a single, feature-rich platform.

**2.2 Empathy Map Canvas**

**Says**: "I want to know if this book is worth it."
**Thinks**: "Is my payment safe? Will the book arrive on time?"
**Does**: Browses categories, reads reviews, checks order status.
**Feels**: Curious, cautious, excited upon delivery.

**2.3 Brainstorming**

Generated features:

- Role-based login
- Seller book upload
- Cart/Wishlist
- Review system
- Admin dashboard
  Prioritized by value and feasibility.

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**3. REQUIREMENT ANALYSIS**

**3.1 Customer Journey Map**

From login > browse > add to cart > checkout > delivery > review.

**3.2 Solution Requirement**

- Responsive UI
- Secure login/signup
- CRUD for books
- Reviews & ratings
- Admin moderation

**3.3 Data Flow Diagram**

Level 1 DFD includes: User, Seller, Admin interacting with Books DB, Users DB, Orders DB, Reviews DB.

**3.4 Technology Stack**

- **Frontend**: React, Vite, Tailwind CSS
- **Backend**: Node.js, Express
- **Database**: MongoDB
- **Authentication**: JWT
- **State Management**: Zustand

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**4. PROJECT DESIGN**

**4.1 Problem Solution Fit**

Customer need for unified book shopping is solved with a comprehensive, role-based system.

**4.2 Proposed Solution**

A 3-role system where customers browse and review, sellers manage inventory, and admins ensure smooth operation.

**4.3 Solution Architecture**

Frontend interacts with REST APIs. Backend handles authentication, business logic, and database interaction. MongoDB stores data. JWT used for secure sessions.

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## 5. PROJECT PLANNING & SCHEDULING

### 5.1 Project Planning

Divided into 4 sprints with user stories and story points. Tracked velocity and burndown chart.

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## 6. FUNCTIONAL AND PERFORMANCE TESTING

### 6.1 Performance Testing

Tested API latency under multiple user scenarios. Maintained average response < 200ms.

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## 7. RESULTS

### 7.1 Output Screenshots

- Login/Register Page
- User Dashboard
- Seller Product Management
- Admin Review Approvals
- Order Page

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## 8. ADVANTAGES & DISADVANTAGES

**Advantages:**

- Easy access to books
- Real-time order tracking
- Admin-controlled moderation

**Disadvantages:**

- Limited to web only
- Requires internet connection

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## 9. CONCLUSION

BookEase successfully provides a robust platform for online book buying, selling, and management with modern tech and features. It bridges gaps between traditional and digital bookstores.

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**10. FUTURE SCOPE**

- Mobile app integration
- AI-based book recommendations
- Voice search integration
- Multilingual support

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**11. APPENDIX**

**Source Code:**

Included in GitHub repo

**Dataset Link:**

Book metadata used from open datasets

**GitHub & Demo:**

GitHub: https://github.com/bhadra0401/BookEase-WebApp-MERN.git

Demo: http://localhost:5173/ or your hosted link